A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F28D9/00 F28F3/02

According to international Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 F28D F28F F24F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
GB 1 484 126 A (COVRAD LTD) 24 August 1977 (1977-08-24) page 1, line 76 -page 2, line 20 page 2, line 77 - line 90; figures 1,2,6	1,7-11
GB 1 116 620 A (ASS ENG LTD) 6 June 1968 (1968-06-06) page 1, line 85 -page 2, line 94; figures 1,2	1-4,7-11
US 4 227 571 A (TJADEN JAN) 14 October 1980 (1980-10-14) column 2, line 19 -column 4, line 2; figure 1/	1-4
	GB 1 484 126 A (COVRAD LTD) 24 August 1977 (1977-08-24) page 1, line 76 -page 2, line 20 page 2, line 77 - line 90; figures 1,2,6 GB 1 116 620 A (ASS ENG LTD) 6 June 1968 (1968-06-06) page 1, line 85 -page 2, line 94; figures 1,2 US 4 227 571 A (TJADEN JAN) 14 October 1980 (1980-10-14) column 2, line 19 -column 4, line 2; figure 1

X Further documents are listed in the continuation of box C.	X Patent family members are tisted in annex.
Special categories of died documents: A document defining the general state of the art which is not considered to be of particular relevance E earlier document but published on or after the international filing date L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O document referring to an oral disclosure, use, exhibition or other means P document published prior to the international filing date but later than the priority date claimed	 To later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the International search report
26 March 2004	06/04/2004
Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Beltzung, F



Intern Application No
PCT/EP 03/12132

	PC1/EP 03/12132		
ation) DOCUMENTS CONSIDERED TO BE RELEVANT			
Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
EP 0 283 937 A (NIHON RADIATOR CO) 28 September 1988 (1988-09-28) column 3, line 17 -column 4, line 55; figures 1-3	14,15		
US 4 805 693 A (FLESSATE DENNIS S) 21 February 1989 (1989-02-21) column 4, line 65 -column 6, line 53; figures 1-9	14,15		
DE 24 46 148 A (ASS ENG LTD) 15 April 1976 (1976-04-15) page 2, line 23 -page 5, line 4; figures 1-3	1,7-14, 20		
PATENT ABSTRACTS OF JAPAN vol. 014, no. 322 (C-0739), 10 July 1990 (1990-07-10) & JP 02 115288 A (KOBE STEEL LTD), 27 April 1990 (1990-04-27) abstract	1,2		
WO 83 03464 A (KVANUM PLATMEKANO) 13 October 1983 (1983-10-13) page 2, line 9 - line 25; figures 1-3	1		
US 3 847 211 A (DICHIRO A ET AL) 12 November 1974 (1974-11-12) column 6, line 45 -column 12, line 18; figures 1-12	1		
EP 0 777 094 A (MITSUBISHI ELECTRIC CORP) 4 June 1997 (1997-06-04) cited in the application column 6, line 3 -column 17, line 36; figures 1-30			
·			
	EP 0 283 937 A (NIHON RADIATOR CO) 28 September 1988 (1988-09-28) column 3, line 17 -column 4, line 55; figures 1-3 US 4 805 693 A (FLESSATE DENNIS S) 21 February 1989 (1989-02-21) column 4, line 65 -column 6, line 53; figures 1-9 DE 24 46 148 A (ASS ENG LTD) 15 April 1976 (1976-04-15) page 2, line 23 -page 5, line 4; figures 1-3 PATENT ABSTRACTS OF JAPAN vol. 014, no. 322 (C-0739), 10 July 1990 (1990-07-10) & JP 02 115288 A (KOBE STEEL LTD), 27 April 1990 (1990-04-27) abstract WO 83 03464 A (KVANUM PLATMEKANO) 13 October 1983 (1983-10-13) page 2, line 9 - line 25; figures 1-3 US 3 847 211 A (DICHIRO A ET AL) 12 November 1974 (1974-11-12) column 6, line 45 -column 12, line 18; figures 1-12 EP 0 777 094 A (MITSUBISHI ELECTRIC CORP) 4 June 1997 (1997-06-04) cited in the application column 6, line 3 -column 17, line 36;		

Trination on patent family members

PCT 21 03/12132

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
GB 1484126	Α	24-08-1977	NONE		بدر کا شبیات کے کا کیا کیا ہے۔ ہم
GB 1116620	A	06-06-1968	NONE		
US 4227571	A	14-10-1980	DE AT AU AU CH DK FR GB JP NL	2738670 B1 357575 B 613778 A 516146 B2 3927778 A 636432 A5 377378 A ,B, 2401395 A1 2013326 A ,B 54067257 A 7808773 A	01-03-1979 25-07-1980 15-12-1979 21-05-1981 28-02-1980 31-05-1983 27-02-1979 23-03-1979 08-08-1979 30-05-1979 28-02-1979
EP 0283937	A	28-09-1988	JP JP EP	63150721 U 64008071 U 0283937 A1	27-02-1979
US 4805693	A	21-02-1989	NONE	<u> </u>	
DE 2446148	А	15-04-1976	DE	2446148 A1	15-04-1976
JP 02115288	A	27-04-1990	NONE		
WO 8303464	A	13-10-1983	SE DE DK EP FI IT NO SE WO	445390 B 3364114 D1 506883 A ,B 0105283 A1 834108 A ,B, 1159376 B 834345 A 8201938 A 8303464 A1	16-06-1986 24-07-1986 04-11-1983 18-04-1984 09-11-1983 25-02-1987 25-11-1983 27-09-1983
US 3847211	A	12-11-1974	NONE		
EP 0777094	A	04-06-1997	JP CA EP	9152292 A 2190793 A1 0777094 A2	10-06-1997 30-05-1997 04-06-1997